

### **R E M A R K S**

Reconsideration of this application, as amended, is respectfully requested.

### **THE SPECIFICATION**

Paragraph [0023] of the specification has been amended to correctly refer to the mandrel with reference numeral 15 in the last sentence thereof, as well as to make some minor grammatical improvements. No new matter has been added, and it is respectfully requested that the amendments to the specification be approved and entered.

### **THE CLAIMS**

Claim 1 has been amended to clarify the feature of the present invention whereby the blank expands axially to become longer while a portion of the blank deforms into the recess, as supported by the disclosure in the specification at, for example, paragraph [0019].

In addition, claims 1-5 have been amended to make some minor grammatical improvements and to correct some minor antecedent basis problems so as to put the claims in better form for issuance in a U.S. patent.

No new matter has been added, and it is respectfully

requested that the amendments to the claims be approved and entered.

It is respectfully submitted, moreover, that the amendments to the claims are not related to patentability, and do not narrow the scope of the claims either literally or under the doctrine of equivalents.

#### THE PRIOR ART REJECTION

Claims 1-3 were rejected under 35 USC 102 as being anticipated by USP 5,218,853 ("Mueller et al"), and claims 4 and 5 were rejected under 35 USC 103 as being obvious in view of the combination of Mueller et al and USP 5,088,311 ("Inoue"). These rejections, however, are respectfully traversed with respect to the claims set forth hereinabove.

According to the present invention as recited in amended independent claim 1, a blank is compressed from axially opposite sides thereof with an upper punch and a lower punch, respectively, each of which is smaller in diameter than the blank and at least one of which is moving during the compressing, thereby extruding the blank such that an axial hollow is formed in each of the upper and lower parts about an axis of the blank, with a solid plug-like portion left in between the axial hollows, such that a portion of the blank opposed to the stepped recess of large diameter expands in diameter and deforms into the recess,

and such that the blank expands axially to become longer while the portion of the blank deforms into the recess. Thus, according to the present invention as recited in amended independent claim 1, the compression of the blank to form the hollows not only causes the blank not only to fill the stepped recess defined by the dies, but also to expand axially to become longer while (at the same time that) a portion of the blank deforms into the recess.

As recognized by the Examiner, Mueller et al discloses compressing a solid rod-like blank from both axial sides with an upper and a lower punch to extrude the blank so that an axial hollow is formed therein, and such that a portion of the blank expands in diameter and deforms into a recess. However, Mueller et al does not disclose, teach or suggest making a portion of the blank expand in diameter while simultaneously making the blank longer in order to make a long axial portion, in the manner of the claimed present invention. Thus, the product made by the method of Mueller et al is just a substantially planiform product with no lengthened axial portion.

Inoue, moreover, discloses a method of forming a hollow stepped shaft, but also does not disclose, teach or suggest making a portion of the blank expand in diameter while simultaneously making the blank longer in order to make a lengthened axial portion.

Accordingly, it is respectfully submitted that even if the teachings of Meuller et al and Inoue were combinable in the manner suggested by the Examiner, the features of the present invention as recited in amended independent claim 1 would still not be achieved or rendered obvious.

In view of the foregoing, it is respectfully submitted that amended independent claim 1 and claims 2-5, 14, 16 and 17 depending therefrom patentably distinguishes over Mueller et al and Inoue, taken singly or in combination, under 35 USC 102 as well as under 35 USC 103.

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Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned for prompt action.

Respectfully submitted,

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